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AMSAT NEWS SERVICE
ANS-050

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org.

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ANS-050 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 050.01
  From AMSAT HQ KENSINGTON, MD.
DATE February 19, 2017
To All RADIO AMATEURS
BID: $ANS-050.01

Nayif-1 Launched

The Indian Space Agency ISRO successfully launched the amateur radio satellite
Nayif-1 along with 103 other satellites, a record for a single launch. The PSLV-
C37 lifted off from the Satish Dhawan Space Centre, Sriharikota, Andhra Pradesh
at 03:58 UT on Wednesday, February 15, 2017.

Nayif-1 started transmitting about an hour after launch and radio amateurs in
the west of the USA reported the first signals. The first frame of data received
at the Data Warehouse was from Christy Hunter KB6LTY. Telemetry data was also
received by WA6FWF, KA7FVV, WC7V, NC7V, K6FW, KE7QPV, WA9ONY, W5PFG, KK6AYK.

Ken Eaton GW1FKY reports he received his first frames of data when the satellite
came in range of the UK at 10:07 UT.

The satellite looks to be in perfect health and it was placed in

autonomous mode
before the end of the first day in orbit. Just like FUNcube-1, this mode has the
spacecraft sending high power telemetry when in sunlight and with the SSB/CW
transponder active when in eclipse. Already many contacts have been made through
the transponder. As expected, the frequency stability of this spacecraft is much
better than its predecessors.

A new post-launch set of TLE's has been issued by the launch authority and it
can be downloaded from http://amsat-nl.org/download/NAYIF_TLE.txt

Please note that these numbers are not based on JSpOC observations so we do not
yet have a valid catalog number.

During the Launch and Early Operation phase (LEOP) of the mission, the Nayif-1
command team have been headquartered at the American University of Sharjah
Ground station in the United Arab Emirates. They have been very grateful for all
the telemetry received from around the world. It has proven to be immensely
useful to the team in checking that the spacecraft is functioning correctly.

Our world-wide network has greatly impressed the many professionals that have
been watching our activities. Already more than 100 ground stations are
submitting data to the Nayif Data Warehouse. Please continue uploading the data
as this will further enhance our knowledge about the spacecraft and the space
environment through which it is traveling at 7.6 km/s.

The Nayif-1 Data Warehouse has been updated and now includes the Whole Orbit,
High Resolution graphs and the upload ranking. It also includes telemetry
details from the ADCS sub-system – this is called the iMTQ and is capable of
actively magnetorquing. Over the coming days, we will be further tweaking the
warehouse, so bear with us if it is unavailable for short periods of time.

Background
Nayif-1 has been developed by the Mohammed bin Rashid Space Centre (MBRSC) and
American University of Sharjah (AUS). The UAE's first Nanosatellite was
developed by Emirati engineering students from AUS under the supervision of a
team of engineers and specialists from MBRSC within the framework of a
partnership between the two entities, aiming to provide hands-on experience to
engineering students on satellite manufacturing.

The spacecraft includes a U/V linear transponder and telemetry transmitter. It
employs enhanced oscillator circuitry and includes an active attitude
determination and control system.

The operating frequencies for the spacecraft are:

Telemetry
145.940 MHz using 1k2 BPSK to the FUNcube standard.

SSB/CW Transponder
Uplink on 435.045 – 435.015 MHz
Downlink on 145.960 – 145.990 MHz

The Nayif-1 Telemetry Dashboard can be downloaded from
http://download.funcube.org.uk/nayif-1_Dashboard_1039_Installer.msi

Guidance notes
https://funcubetest2.files.wordpress.com/2017/02/nayif-1_dashboard_notes_release_1-0b.pdf

A file to test that the Dashboard and Warehouse configuration are working correctly
http://download.funcube.org.uk/nayif1_testfile.funcubebin

Nayif-1 Data Warehouse http://data.amsat-uk.org/nayif1/

[ANS thanks AMSAT-UK for the above information]

Satellite Operators on the Road

ZF, CAYMAN ISLANDS. Scott/KA9P and Ron/W9XS will be active as ZF2SC and ZF2FB, respectively, from the Cayman Islands between February 22-28th. Activity will be on 40/30/20/17/15 meters and the satellites. Operations will typically be CW, with a KX1 or KX3, and Buddipole beams or verticals. QSL via their home callsigns or LoTW.

6E, MEXICO. A group of Ham Radio operators from Southern Mexico will be operating from some Mayan archaeological sites from the Mexican States of Yucatan, Campeche, Tabasco, Chiapas and Quintana Roo, using the special callsign 6E3MAYA between March 18-21st. Activity is to commemorate the Spring Equinox which is so important for the Mayan culture. Activity will be on 80-6 meters on CW, SSB, the satellites and the Digital modes. QSL via XE3N.

C6, BAHAMAS (IOTA Op). Operators John/M0IDA, Rob/M0VFC and Steve/M1ACB hope to be active as C6APY from Little Harbour Cay, Berry Islands (NA-054, WW Locator FL15do). They will fly into the Bahamas on March 2nd, but it will take them a couple of days to get to the island, so they hope to be active around March 4th - but this is very much weather dependent, as is the whole operation. They will fly back to the UK on March 12th, which means they will need to de-rig on the 10th or 11th, again varying according to the weather. Operation probably won't be 24/7 - they will do as much operating as they can, but eating and sleeping is back on the boat, there's only three of them, and they will probably want to go for the occasional swim as well. They will be running up to three stations simultaneously, all Elecraft K3s at 100W. They will be generator powered and have to carry the full week's fuel with them on the boat, hence no amps. They are expecting that most QSOs will be on 40-15 meters; they will monitor the higher HF bands as well and may venture on to 10/12m if propagation favors them; similarly they may throw up an 80m dipole, but don't expect to do very much, if anything, there. There will definitely be CW (op M0VFC) and SSB (ops M0IDA and M1ACB); they may also do some data if time permits. They should be active on some satellite passes with hand-held antennas: the FM birds will only cover parts of the USA, and not EU, so they will attempt some FO-29 passes as well. They are not satellite experts though, so be patient with them. QSL is via M0OXO's OQRS system. They will upload the logs to ClubLog and LoTW regularly throughout the trip, assuming all the kit plays nicely. Watch Twitter for any other updates:

https://twitter.com/rmc47 (M0VFC)
https://twitter.com/ItinerantHam (M0IDA)

[ANS thanks Ohio/Penn DX Bulletin for the above information]

Amateur Radio on the International Space Station Contact Opportunity

Call for Proposals
Proposal Window February 15 - April 15, 2017

The Amateur Radio on the International Space Station (ARISS) Program is seeking formal and informal education institutions and organizations, individually or working together, to host an Amateur Radio contact with a crew member on board the ISS. ARISS anticipates that the contact would be held between January 1, 2018 and June 30, 2018. Crew scheduling and ISS orbits will determine the exact contact dates. To maximize these radio contact opportunities, ARISS is looking for organizations that will draw large numbers of participants and integrate the contact into a well-developed education plan.

The deadline to submit a proposal is April 15, 2017. Proposal information and documents can be found at www.arrl.org/hosting-an-ariss-contact.

The Opportunity

Crew members aboard the International Space Station will participate in scheduled Amateur Radio contacts. These radio contacts are approximately 10 minutes in length and allow students to interact with the astronauts through a question-and-answer session.

An ARISS contact is a voice-only communication opportunity via Amateur Radio between astronauts and cosmonauts aboard the space station and classrooms and communities. ARISS contacts afford education audiences the opportunity to learn firsthand from astronauts what it is like to live and work in space and to learn about space research conducted on the ISS. Students also will have an opportunity to learn about satellite communication, wireless technology, and radio science. Because of the nature of human spaceflight and the complexity of scheduling activities aboard the ISS, organizations must demonstrate flexibility to accommodate changes in dates and times of the radio contact.

Amateur Radio organizations around the world, NASA, and space agencies in Russia, Canada, Japan and Europe sponsor this educational opportunity by providing the equipment and operational support to enable direct communication between crew on the ISS and students around the world via Amateur Radio.

In the
US, the program is managed by AMSAT (Radio Amateur Satellite
Corporation) and
ARRL (American Radio Relay League) in partnership with NASA and CASIS
(Center
for the Advancement of Science in Space).

More Information

Interested parties can find more information about the program at
www.ariss.org
and www.arrl.org/ARISS.

For proposal information and more details such as expectations, proposal
guidelines and proposal form, and dates and times of Information
Sessions go to
http://www.arrl.org/hosting-an-ariss-contact.

Please direct any questions to ariss(a)arrl.org.

[ANS thanks Dave, AA4KN, for the above information]

RadFXsat-2 Receives IARU Frequency Coordination

RadFXSat-2 is a 1U cubesat technology demonstration mission from Vanderbilt
University that has been accepted for launch as part of NASA’s CubeSat
Launch
Initiative. Vanderbilt University is partnered with AMSAT, who will
provide the
satellite and communications for the experiments onboard as part of the
AMSAT
Fox program.

AMSAT recently received IARU frequency coordination for a 1200 baud BPSK
telemetry downlink beacon on 435.750 MHz, and a mode V/u inverting
transponder
with an uplink of 145.860-145.890 MHz and a downlink of 435.760-435.790 MHz.

RadFXSat-2 is currently manifested as part of the ELaNA XX mission,
scheduled
for no earlier than December 2017, on a Virgin Galactic Launcher One, from
Mojave, California. Other satellites on the mission include:

- CACTUS-1 – Capitol Technology University, Laurel, Md.
- ALBus – NASA Glenn Research Center, Cleveland, Ohio
- SurfSat – University of Central Florida, Orlando, Fla.
- Q-PACE – University of Central Florida, Orlando, Fla.
- CAPE-3 – University of Louisiana Lafayette, La.
- MiTEE – University of Michigan, Ann Arbor, Mich.
- PICS – Brigham Young University, Provo, Utah
- INCA – New Mexico State University, Las Cruces, N.M.
- MicroMas-2b – Massachusetts Institute of Technology, Lexington, Mass.
- EXOCUBE – California Polytechnic University, San Louis Obispo, Calif.
- PolarCube – University of Colorado at Boulder, Boulder, Colo.

[ANS thanks Drew, KO4MA, for the above information]

14th Annual CubeSat Developers Workshop

The 14th Annual CubeSat Developers Workshop will be held in San Luis Obispo, CA
April 26-28 2017. The schedule is now on the workshop website at the link below.
http://www.cubesat.org/s/2017-Workshop-Schedule.pdf

REGISTRATION
Prices are as follows:
3 Day Pass + Banquet
Early Bird Professional - $375
Professional - $475
Student - $150

1 Day Pass
Early Bird Professional - $160
Professional - $200

Early bird registration ends on March 17, 2017 so be sure to register before the
price goes up!

[ANS thanks the CubeSat Workshop Team for the above information]

BY70-1 Re-entry

The 2U CubeSat BY70-1 was built by students from the Beijing Bayi High School
and carried into a 524 x 212 km orbit on a CZ-2D rocket launched from the Taiyuan Space Launch Center on December 28, 2016.

On February 17, 2017, as the satellite started to burn up on its re-entry into
the Earth’s atmosphere, this end of mission statement was posted on the school’s
website.

Dear friends of BY70-1:

Satellite BY70-1 has completed all designed missions. For the amateurs who completed 2-way QSO using the repeater onboard, received effective satellite telemetry, or obtained satellite camera photos, we would like to invite you sending connection data package (audio or video evidence), satellite telemetry
data or photos received to Email: 6015(a)bayims.cn.

So that we can keep statistics records and deliver our appreciation toward you
in public. We would be pleased to exchange QSL card for QSO users, and some souvenirs for the telemetry or camera photos users.

We hope more Amateur youth space program will be brought to you in the near future!

E-mail Address: 6015(a)bayims.cn

Post Address: Mr Xiangming TAOBeijing Bayi School, 29# Suzhou Street,
Haidian
Dist, Beijing, China

P.O. 100080

[ANS thanks Beijing Bayi High School and AMSAT-UK for the above information]

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information.

73,
This week's ANS Editor,
Lee McLamb, KU4OS
ku4os at amsat dot org